

Original Communication

An evaluation of ‘confirmatory’ medical opinion given to English courts in 14 cases of alleged child sexual abuse

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Abstract

Fourteen cases of alleged child sexual abuse, where the medical opinion rated a high degree of concordance with the history or suspicion of abuse given to the doctor, were reviewed to evaluate the objectivity and reliability of the medical evidence. It was common practice for physicians conducting the medical examination to form conclusions that the child had been sexually abused on the basis of the examiner's willingness to accept statements by the child, the adolescent, the caregiver or the investigator without determining if this information was accurate and obtained through the use of appropriate interviewing techniques. In the prepubertal children, evaluation of the examination findings revealed anatomical descriptions that were normal or non-specific, rather than supportive of abuse. In the teenagers, inadequate consideration was made of the behavioural and physical differences that occur with adolescence.

The physical findings were not interpreted using research derived knowledge concerning the variations of “normal” and the particular conditions that may be mistaken as abuse. The medical reports of these examinations suggest to this author a possibility of the significance and relevance of physical findings being unduly and unwittingly over-emphasised, despite the cases all having occurred post the Cleveland Inquiry [Butler Sloss E. Report into the Child Abuse Enquiry in Cleveland, 1987. London, HMSO] and some as recently as 2005. This may reflect emotional involvement in the case and the doctor taking on a role of advocacy for the child. It is sometimes difficult for physicians to step out of the medical role where they do have the responsibility to diagnose and into a role where their information is only a piece of the puzzle and it is the work of the court to determine if sexual abuse has occurred. The role confusion between medicine and forensics must be sorted out in order for physicians to provide an objective assessment. The main conclusion of this paper is that it identifies significant training needs among doctors undertaking child examinations for suspected sexual abuse.

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Keywords: Expert opinion; Child sexual abuse; Evaluation of ano-genital findings; Hymen evaluation; Anal findings**1. Background**

This paper examines the validity of opinions given by doctors to the court in 14 cases of alleged child or adolescent sexual abuse, where the medical opinion was strongly supportive or diagnostic of such abuse. The issue being examined here is the validity of the evidence *not* a determination of whether or not child abuse had occurred.

The past 20 years has seen a considerable increase in our understanding of child sexual abuse (CSA). While controversies and disagreements certainly still exist, a body of

knowledge has been developed on the epidemiology, manifestations, and sequelae of the sexual misuse of children. Although the total evidence base is still relatively small, variations of normal in anal and genital anatomy have been better clarified.^{1–8} Twenty years ago, the assumption appears to have been that CSA in prepubertal girls mirrored adult sexual activity. Given the very different dimensions of prepubertal genital anatomy it was expected that there should be signs in most cases. This appears wrong. We have learned that the physical examination is most often normal, even in the face of a history that would suggest genital injuries should be present.^{9–11} Similarly great weight has been accorded to what the child says.¹² While the child's information is important, we have also learned

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there is considerable importance to establishing the manner in which the child's information was elicited.¹³

2. Methods

The cases included came to the author's knowledge between 2000 and 2006, through being approached to provide an independent expert report. The author is a practising obstetrician gynaecologist within the NHS, with a special interest in paediatric and adolescent gynaecology. For a number of years the author has also provided a service to Gloucestershire Constabulary for forensic sexual assault examination of children and adults.

From 2000 to 2006 the author was instructed as an independent expert in 24 cases involving children under 16 from outside the county. Cases of suspected abuse where the author was involved in the primary examination of the child were not included. The criteria for inclusion was that the case involved a child under 16 years, and a high degree of certainty had been expressed by one or more doctors conducting the primary forensic medical examination that the anatomical findings were indicative of sexual abuse. In 14 of the 24 cases a high degree of certainty of sexual abuse had been opined. The remaining ten cases were excluded because there was no relevant medical examination of the child owing to the allegation being too historical (three cases), because the level of certainty that the finding was caused by abuse was only intermediate (one case), because the case information available to the author was incomplete (three cases), or because the findings were opined to be normal or non-specific (three cases). In total the 14 cases included opinions from 27 different doctors, and are typical of those encountered by the author.

Instructions were received from the prosecution in two cases, the defence in three cases, the family court in seven cases, and in connection with a case appeal or review in two cases. In one case the court instructed the author to re-examine the child, owing to disputed findings. In several cases the author attended a meeting of experts which sometimes included review of photographic records. The time-scale of legal proceedings in these cases had ranged from 1990 to 2005.

Details of cases have been carefully anonymised to ensure confidentiality and compliance with the Data Protection Act and the common law duty of confidence, as set out in *The Protection and Use of Patient Information* issued under cover of HSG(96)18. Discussion of the appropriateness of reporting anonymised cases was held with several of the legal professionals involved, with two independent experts in Medical Ethics and Law (Centre for Ethics in Medicine, University of Bristol), and with the Criminal Cases Review Commission, who instructed the author in Case 8. Those cases where a conviction was obtained are already in the public domain.

At the present time the RCP(UK) report on interpretation of genital findings in children is withdrawn and is in the process of revision.¹⁴ A North American collaborative

statement consisting of a comprehensive listing of findings in non-abused children and medical and laboratory findings associated with suspected CSA was first published in 1992.¹⁵ This has sometimes been known as the "Adams Classification System" and has been revised regularly in response to newly published research findings, to arrive at the current (2005) revision.¹⁶ New data has largely confirmed the original classification and only minor changes exist between the original and the current revision. It is not intended as a diagnostic tool, but rather was developed to assist in the interpretation of physical examination findings and laboratory results. Despite collaborative consensus, it is not universally accepted in the US and it should be regarded as a work still in progress. It should also be acknowledged, that although there is now a much larger literature on CSA than a decade ago, there is still comparatively little primary data detailing the anatomical and microbiological data in normal non-abused children and cases of sexual abuse. The revised Approach to Interpretation is derived from the available peer reviewed primary data.¹⁶ The findings in the 14 cases have been evaluated against this (Table 2), but account has also been taken of the original 1992 classification since some of the cases date back to that time.

3. Results

The medical examinations involved between one and three doctors in each case. In total 27 different doctors examined the 14 children. They included 18 paediatricians, seven forensic physicians and two gynaecologists.

Some cases involved only civil or family court proceedings, some involved only criminal proceedings and a few cases involved both family and criminal court proceedings. Criminal proceedings arose in cases 4, 5, 6, 7, 8, 9, and 13. Convictions were obtained in cases 6, 7, 8 and 13 which are therefore in the public domain.

Table 1 details why each child came to be forensically examined and the reported ano-genital findings with the interpretation detailed in reports by the examining doctor/s.

3.1. View of the mother/carer

In four of the prepubertal cases (1, 2, 4 and 5) the child's mother thought her genital region looked abnormal and open. The position of the hymen, just inside the tissues that form the entrance of the vagina, mean it is covered by the labia and may not be visible simply by the child lying with her legs apart. There is a range of different findings among 'normal' children. In some cases the hymen orifice can be visualised with the child lying in a frog-leg position, however in many children visualisation of the hymen requires retraction of the labia, and sometimes it is necessary to place the child in the knee-chest position to see the posterior 180° completely. For this reason, even if the hymen were abnormal, a parent would not be expected to notice

Table 1
Summary of cases and findings

Case	Age (in years)	Background to examination and examination findings	Opinion/interpretation of findings *problems with examination method
1	2	Acrimonious custody dispute. Mother reported child's genital area sore following a visit to father, and that the 5 year-old brother was exhibiting sexualised behaviour Partial V-shaped hymen notch curving to the left at 5–6 o'clock	Child said to be 'abnormally' compliant with examination Opinion that this was indicative of penetrative abuse *Evaluation did not include knee chest position
2	5	Acrimonious parental dispute and domestic violence. Neighbours raised concern about marks on child's face Mother concerned that child had a discharge. A hymen notch at 6 o'clock, but depth not described Outgoing happy child with good school progress. The child denied anyone had touched her genitals	Opinion that the hymen was 'torn', implying sexual interference. Findings considered supportive of old penetrating injury *Evaluation did not include knee chest position *Unclear whether full or partial thickness notch
3	6	Mother's mental health impaired. Claimed the father applied something to the girl's genitalia. Symptoms of discharge and itching, cleared with regular bathing. Index child: Hymen transverse and vertical diameters 10 mm Irregular posterior rim with bumps at 5 o'clock and 9 o'clock with a thinner (rubbed away) appearance in between these. Mixed anaerobes on swabs	Opined that the hymen was attenuated and that the bacterial colonisation was a well-recognised marker of sexual activity Conclusion: chronic penetrative abuse *No measurement given for this posterior rim of tissue *Not examined in Knee-chest position
4	8	Parental suspicion from talk overheard between 4 and 8 year old siblings Hymen orifice in obese 8 year old over 1.5 cm	Recurrence of soiling considered highly suggestive of abuse. Hymen orifice 'highly suggestive of abuse'. 'Single most important feature is a clear statement made by the child' *FP unaware child's statement not spontaneous
5	7	Child disclosed to mother while in the bath. Spontaneous, clear descriptions well beyond the sexual knowledge expected for age Hymen gaping without labial separation. Transverse diameter 7 mm. Irregular hymen with a bump or skin tag at 6 O'clock	Hymen gaping, a mound of tissue and a hymen tag described as positive findings, representing healing of previous trauma
6	16	Complaint of unlawful sexual intercourse by boyfriend of 2 years. Feelings for boyfriend had changed. Notes record hymen orifice 1–2 cm. Report states 'the hymen orifice immediately gapes open, at least 2 cm, and between 5 and 7 o'clock the hymen was discontinuous'. Hymen was less fleshy than it should be for her age	Concluded this was child sexual abuse because the child gave a history and the hymen was less fleshy than other children her age
7	10	Allegation of vaginal rape by 8 year old boy and anal rape by 15 year old boy three days before examination. Child very uncooperative with examination. Hymen very wide, >1 cm transversely and >1–2 cm vertically. No fresh trauma or asymmetry. Thin rim hymen Child refused anal examination. Mother forcibly separated buttocks – freshly bleeding fissure	Hymen 'gaping open, thin and attenuated'. Recorded a red crack on the anal sphincter in the hand written notes, and a laceration in the report Doctor stated "no doubt had I examined her anal orifice there would be further smaller bruises or lacerations" Concluded a strong allegation of anal and vaginal abuse was supported by evidence
8	14	Historical allegation of repeated vaginal and anal penetration at 10–12 years of age Menarche at 13, examined age 14. Fusion of the lower labia minora with the appearance of a healed irregular tear. Anal findings of dilated veins posteriorly and a healed fissure at 8 o'clock	Opined that the findings strongly support history of vaginal intercourse. Healed fissure not in the usual position for fissures due to constipation EUA 2 years later, for inability to insert tampons, showed normal labia and a congenital septum of the hymen with 2 very small openings into vagina
9	15	Alleged rape by older acquaintance. Examination findings were various body bruising, a post intercourse fishy smell, complaining of tenderness to the left side of the vulva but no injuries seen, posterior fourchette frayed. Hymen not intact	Concluded that the recorded injuries were all consistent with the timing of the incident. There are possible alternative explanations for each injury but in combination they are consistent with the account

(continued on next page)

Table 1 (continued)

Case	Age (in years)	Background to examination and examination findings	Opinion/interpretation of findings *problems with examination method
10	8	Father had forensic history. Child had blank spells dysuria and vulvovaginitis symptoms Crescentic hymen with anterior notches at 11 and 1 o'clock – bigger at 1 o'clock. Swabs grew mixed anaerobes The child strongly and consistently denied any sexual interference	Opined the asymmetric 1 o'clock notch consistent with penetrative trauma The blank spells, and rubbing described as masturbatory self-mutilation highly correlated with CSA. The finding of mixed anaerobic bacteria described as “supportive of but not diagnostic of sexual abuse. Recurrent urinary symptoms in the absence of infection made sexual abuse a more likely cause”
11	6	Labial injury from falling astride. Previous allegation concerning another child in family led to forensic examination. Superficial abrasion near clitoris. The introital opening 8 mm in the vertical direction and 3 mm transversely. The anus appeared lax Spontaneous anal dilatation occurred, 1 cm in a vertical direction and 0.5 cm across with buttock separation for 30 s	Opined that the hymen was abnormal, with an orifice too large and thinning at 2–4 o'clock A number of follow up examinations occurred and the thinning then appeared as a 1 mm notch. Opined this had been caused by a penis or finger. At a meeting of experts a third paediatrician disagreed but was told the child had said her father did it. A consensus was then reached
12	3	Substantiated physical abuse in child and siblings Mother threatening to professionals and violent to partner. Paediatrician thought the genitalia were sore and red, the anus lax with congestion and swelling of the anal margin. Child examined again two weeks later and on this occasion the anus was no longer lax, but there was flattening of the anal folds	Opined that the anal findings were supportive of sexual abuse and suggestive of blunt penetrating trauma of the anus
13	16	Acrimonious parental separation with loss of paternal contact. Six years later daughter alleged abuse by father at age 10. No allegation of penetration FP 1: “An asymmetric hymen >2.5 cm wide, thickened edge and old scars at 5 and 11 o'clock. Anus: old scar and some tags” FP 2: “evidence of disruption to the external anal sphincter anteriorly. Posteriorly a skin tag in the middle with an area of scar tissue posterior” Re-examined 3 months later by a forensic paediatrician: “deep tearing/clefting not extending to the base at 5 and 8 o'clock on the hymen. Moderate loss of tissue resulting in a wide orifice well over 20 mm. Fourchette area ill defined, distorted with lumpy change and a tiny area of superficial friability. Anal exam – a thick scar at 5 o'clock and a smaller crinkly tag in the midline anteriorly”	FP 1 opined the scars were at least six months old and probably some years old. Considered the dilatation of the hymen conclusive evidence the vagina had been penetrated at least by an adult finger or more likely by a penis. Summarised that the evidence conclusively indicated child sexual abuse had occurred FP 2 concluded there was evidence of vaginal and anal penetration at least two years ago and possibly much longer Paediatrician opined that vaginal mucosa readily viewed with stretching of the perineum, was unusual at this stage of development. ‘My concern is that there are also anal findings which strongly suggest there has been trauma at this orifice’ In court proposed a theory that examination in the adult can tell abuse long ago through identifying old changes, not due to consensual sex, from assessment of the degree of hymen reduction
14	3	Sibling death and possible non-accidental injury to another sibling. Child's anus lax, with a fissure at 9 o'clock and reflex dilatation to 1 cm. Hymen asymmetrical with right edge narrower than the left side of the hymen, Ridge on the left of hymen Re-examined 6 months later: Anus now normal. Examined in knee chest position on this occasion and the appearance of the hymen had changed completely. The edge retained some of it's asymmetry but appeared much more normal	Certainty the appearances were evidence of past penetration of the vagina and anus. Child not examined in knee chest despite concern that the hymen was abnormal At 2nd examination also opined the changes indicative of past penetration. Photographs of both examinations demonstrated an uninterrupted normal thickness rim of hymen, and a possible fissure/scar in the anal margin at 9 o'clock

Table 2

Categorising findings of the 14 cases by evidence based interpretation^{16,17}

Normal findings	Cases with finding present and attributed to abuse
Hymenal bumps or mounds	Cases 3 and 5
Hymenal tags or septal remnants	Case 5
Hymenal notch/cleft in the anterior (superior) half of the hymenal rim (prepubertal girls), on or above the 3 o'clock–9 o'clock line, patient supine	Case 10
Shallow/superficial notch or cleft in inferior rim of hymen (below 3 o'clock–9 o'clock line)	Case 1
Perianal skin tag	Case 13
Findings commonly caused by other medical conditions (non-specific)	
Erythema (redness)	Case 12
Vaginal discharge. (Many infectious and non-infectious causes, cultures must be taken to confirm if it is caused by sexually transmitted organisms or other infections.)	Cases 2, 3, and 10 (no STIs identified)
Friability of the posterior fourchette or commissure (May be due to irritation, infection, or may be caused by examiner's traction on the labia majora)	Cases 9 and 13
Narrow hymen rim, but at least 1 mm wide	Case 7
Anal fissures (usually due to constipation, peri-anal irritation)	Cases 8 and 14
Venous congestion, or venous pooling in the peri-anal area	Case 8
Flattened anal folds	Case 12
Partial or complete anal dilatation to less than 2 cm (anterior–posterior dimension), with or without stool visible ^a	Cases 11, 12, and 14
Faecal soiling	Case 4
Acute trauma (may be accidental or abuse)	
Acute lacerations or extensive bruising of the hymen	None
Fresh laceration of the posterior fourchette (must be differentiated from dehiscence labial adhesion, and may also be caused by accidental injury or consensual intercourse in adolescents)	None
Injuries indicative of blunt force penetrating trauma (or from abdominal/pelvic compression injury if such history is given)	
Peri-anal lacerations extending deep to the external anal sphincter (not to be confused with partial failure of midline fusion)	Possibly Case 7, but not seen clearly by examining doctor
Hymenal transection (healed). An area between 3 and 8 o'clock on the rim of the hymen where it appears to have been torn through, to or nearly to the base, so there appears to be virtually no hymenal tissue remaining at that location. This must be confirmed using additional examination techniques such as a swab, prone knee–chest position, Foley catheter balloon (adolescents only), or water to float the edge of the hymen. This finding has also been referred to as a “complete cleft” in sexually active adolescents and young adult women	Possibly case 2, but depth not stated and not confirmed using additional techniques
Missing segment of hymenal tissue. Area in the posterior (inferior) half of the hymen, wider than a transection, with an absence of hymenal tissue extending to the base of the hymen, which is confirmed using additional positions/methods	Case 6 (age 16)
Findings diagnostic of trauma	
Acute laceration/trauma to external genital/anal tissues	Case 11-accidental cause case 7 – freshly bleeding could have been from force use to expose buttocks or alleged assault 3 days earlier
Complete transection of the posterior hymen	Uncertain in case 2 – prepubertal Case 6
Anal fissure or scar	Cases 8, 13, and 14
Finding diagnostic of sexual contact	
Positive confirmed culture for gonorrhea, from genital area, anus, throat, in a child outside the neonatal period	None
Confirmed diagnosis of syphilis, if perinatal transmission is ruled out	None
Trichomonas vaginalis infection in a child older than 1 year of age, with organisms identified by culture or in vaginal secretions by wet mount examination	None
Positive culture from genital or anal tissues for Chlamydia, if child is older than 3 years at time of diagnosis, and specimen was tested using cell culture or comparable method approved by the Centers for Disease Control ^a	None
Positive serology for HIV, if perinatal transmission, transmission from blood products, and needle contamination has been ruled	None
Pregnancy	None
Sperm identified in specimens taken directly from a child's body	None

• Immediate anal dilatation of at least 15 mm with stool not visible considered suspicious for abuse.

• Culture proven chlamydia (prepubertal child older than three years).

^a Definitions changed from the original 1992 classification 1992.

Table 3
Hymen measurements in girls selected for non-abuse

<i>Data from McCann et al. (1990)²², age range 5 years to onset of puberty</i>										
Exam technique	Hymen plane	5–7½ years no. examined	5–7½ years mean (mm)	5–7½ years range (mm)	8y-Tanner II no. examined	8y-Tanner II mean (mm)	8y-Tanner II range (mm)			
Separation	Vertical	39	5.6 ± 2.3	1.0–11.0	19	8.4 ± 2.2	5.0–13.5			
	Horizontal	39	4.2 ± 2.7	1.0–8.0	19	5.7 ± 1.6	3.0–8.5			
Traction	Vertical	43	6.1 ± 2.1	1.0–10.0	20	8.3 ± 2.8	2.0–15.0			
	Horizontal	43	5.6 ± 1.8	1.0–9.0	20	6.9 ± 2.0	2.5–10.5			
Knee chest	Vertical	41	7.0 ± 2.0	3.0–11.5	21	8.7 ± 2.6	5.0–15.0			
	Horizontal	41	5.6 ± 1.5	2.5–8.5	21	7.3 ± 1.7	4.0–11.0			
<i>Data from Berenson and Grady (2002)⁸, age range 5, 7 and 9 years</i>										
Exam technique	Hymen plane	5 yrs no. examined	5 yrs mean (mm)	5 yrs range (mm)	7 yrs no. examined	7 yrs mean (mm)	7 yrs range (mm)	9 yrs no. examined	9 yrs mean (mm)	9 yrs range (mm)
Supine	Vertical	18	5.1	1.25–9.25	13	6.7	2.25–14.5	4	11.0	4.25–17.25
	Horizontal	82	4.6	1.0–8.0	78	5.5	1.75–10.5	59	6.1	1.75–12.5
Knee chest	Vertical	16	4.9	1.0–9.25	13	7.1	3.75–14.0	6	9.5	4.25–14.75
	Horizontal	78	3.7	1.0–8.0	74	5.5	1.75–11.0	56	6.5	3.0–12.75

this when bathing or cleaning a child or when changing a nappy. It is possible that the origin of the mothers' statements, that the girls looked abnormal and open, may have been influenced by their fears that sexual abuse had occurred.

3.2. The child's behaviour

Case 11 was described as a happy little girl and co-operated fully with the examination, while cases 7 and 8 were highly distressed, refusing and uncooperative with any examination. Both behaviours were described as supportive of sexual abuse. Although a wide range of behavioural problems has been linked to sexual abuse, none is specific or diagnostic for sexual abuse. They also occur in non-abused children, and interpretation must be placed in the context of a comprehensive multidisciplinary assessment of the child and family. Behavioural indicators can be useful, but it should be remembered that they are not diagnostic of sexual abuse, and they can never rule it out.

In case 8 it seems likely the findings were uncertain owing to her lack of co-operation with the examination, and because what was described was totally inconsistent with the findings of an EUA two years later. While it is accepted that examination will be suboptimal where it is not possible to gain cooperation of the child, it is completely unacceptable for the doctor to include "would be findings" in any report, as occurred in case 7 (Table 1).

3.3. Documentation

Photodocumentation was undertaken in five cases, and the pictures were available for review in four cases. The quality of the photographs was generally poor. In two cases they were so poor that no opinion could be made about the anatomy from the images.

Line diagrams were rarely provided in the cases without photodocumentation. In case 1 a line diagram was virtually

identical with a published case of a normal hymen notch,¹⁷ although the examining doctors diagnosed it as indicative of penetrative abuse.

In case 7 there was no record of the child's height, weight or pubertal status, and no description of the posterior fourchette or hymen type, although a drawing in the hand written record adjacent to 'she did the separation herself' looks like an undisrupted posterior rim hymen.

3.4. The hymen measurements

In case 7 the hymen orifice measurements (>1 cm horizontally by 1–2 cm vertically) appear to be estimates within the normal range (Table 3). The description of the hymen as a thin rim does not justify a designation of attenuation. The key to defining attenuation is the thickness of the posterior rim, but it is extremely difficult to measure accurately. Terms such as 'thin', 'thickness', 'attenuation' and 'gaping' are all terms that have little if any meaning, and their use is not recommended.¹⁸ If measurements are to be undertaken then the use of magnified photography is the most effective method for obtaining accurate sizes. A rim of less than 1–2mm was found in 22% of girls selected for non-abuse.⁸ Only a value of less than 1.0 mm has so far been confined to prepubertal victims of abuse.¹⁹ Considering the doctor did think the hymen was abnormal, the serious limitation that it could not be examined in knee chest position was not explained in their report.

In case 11 the doctors concluded the hymen orifice was too large, although the measurements were well within the normal range (Table 3). The child was examined five times by two of the doctors, yet they did not comment on the hymen type. From the age of the child and the measurements given (8 mm vertically by 3 mm horizontally) it would most likely be a crescentic variety. In particular, they considered the vertical measurement too large. Vertical measurements are expected to be bigger in crescentic hymen since there is no tissue between 11 and 1 o'clock.

For this reason the vertical diameter has been considered an inappropriate measurement in children with crescentic hymen in more recent research studies.^{3,7}

In several cases the hymen was described as ‘gaping’. This is a subjective impression. One assumes they meant that the hymen orifice appeared open, such that a view could be obtained into the vagina. The ease with which the hymen orifice and vagina can be seen with a child lying supine in the frog-legged position is very variable, and its significance is unknown. Another interpretation might be a hymen orifice that was unusually wide, however in these cases the doctors went on to describe hymen diameters which are normal. Research evaluating the examination of the hymen in the diagnosis of previous penetration has not included or commented on the degree of gaping.^{19,20} This is probably because subjective impressions cannot be reliably measured and do not show high levels of inter-observer agreement. Unfortunately the method used for assessing the size of the opening, when a measurement was recorded, was either guessed, not stated at all, or was contentious (e.g., insertion of the end of the doctor’s finger in one case). Published studies, which evaluated the normal range of hymen measurements in non-abused children, used a very different methodology. Several studies demonstrated such a wide range of hymen orifice measurements in girls with no suspicion of abuse that this measurement is not of value in determining the likelihood of penetration (Table 3).^{7,19–22} Studies of non-abused children have also found that the diameter of the hymenal orifice depends on the child’s age and weight.^{7,8} It may have been significant that case 4 weighed >99.7 centile.

3.5. Hymen tags

In case 5 the examining doctor suggested that the mound of tissue and hymenal tag at 6 o’clock may represent healing of previous trauma. Although skin tags have often been noted at the site of previous anal injury, the same has not been reported with the hymen. A review of published data on non-abused children conclusively shows that a hymen tag and a mound of tissue are common non-specific findings.^{3,4,7,21–23,8}

3.6. Hymen notches

In case 10 two doctors considered asymmetric notches at 1 and 11 o’clock in an eight year old child to be consistent with penetrative trauma. Notches in the anterior part of the hymen are common and naturally occurring.^{3,7,8} Case 10 was re-examined by the author and had a normal crescentic hymen.

Cases 1, 2, 3 and 11 all included opinions that notches in the hymens of prepubertal children were abnormal, but none of the children was examined in knee chest position. In case 11 the notch was a 1 mm indentation in the hymen. This is of no significance unless there is fresh bleeding to indicate it is acute trauma.

In case 13 the number of the hymen notches in a 16-year old changed between the two examinations three months apart. Despite this all three doctors involved gave opinion to the court that the examination findings strongly corroborated CSA which was alleged to have occurred six years earlier. The paediatrician who performed the second examination clarified that the notch at 11 o’clock (previously attributed to abuse) was part of the normal anatomy. One of the doctors at the first examination concluded the defects on the hymen were more than six months old and probably some years old and provided ‘*conclusive evidence of child sexual abuse . . . it was penetrated by at least an adult finger or more likely a penis*’. The co-examining doctor at the first examination concluded there was evidence of penetration at least one to two years ago and possibly much longer. This aging of the ‘defects’ was highly inaccurate. In well-documented cases of penetration, the healing process for minor tears is rapid.²⁴ Even after as little as one week a tear may heal leaving no evidence. The paediatrician conducting the second examination concluded the best that could be said was that the findings had not occurred in the last two weeks, however she did not provide any explanation for the new defect in the hymen at 8 o’clock at the second examination. All three doctors who examined case 13 failed to consider the possibility that a 16-year-old may have been consensually sexually active but might not wish to volunteer this information. They took the girl’s sexual history in her mother’s presence. The findings described should have raised the possibility that consensual sexual activity may have occurred before the first as well as between the examinations, and were not necessarily from CSA six years earlier. Claims around a theory that an examination in the adult can tell abuse long ago were used to back up the opinion given in court. In reality, once an adult’s hymen has been injured and any healing completed, there is no way to determine if the injury occurred before or after puberty.

3.7. Anal findings

In cases 11 and 14 anal dilatation to 1 cm was considered to be evidence of past penetration, and in case 12 anal laxity was said to be suggestive of blunt penetrating trauma. These findings may be a normal reflex or may have other causes, such as severe constipation, encopresis or neuromuscular conditions.^{2,6,9,25} No consensus exists currently among experts as to how anal dilatation should be interpreted.¹⁶

In case 8 the examining doctors opined that the healed fissure at 8 o’clock was not in the usual position for fissures caused by constipation, so inferring that it was more likely to have resulted from penetrating trauma. There is no scientific data to support this proposition that the position of a fissure or scar can help determine its cause. In case 13 the three doctors who examined the adolescent considered the posterior anal skin tag and scar to be evidence of penetrative trauma. Skin tags are a common normal variant.^{2,6,26}

One doctor said this was at least six months old and a second said it was at least two years old and possibly much longer. In reality healing of anal trauma is rapid and likely to be complete in a matter of days.²⁴ Fissures are a common finding. The mechanism or date of injury cannot be determined from the position of the fissure or the appearance of a scar. In case 13 the allegations were of inappropriate touching and oral sex. They did not include any form of anal or genital penetration. However the paediatrician took the medical diagnosis one step further by suggesting the girl was repressing. Thus a diagnosis of penetrative abuse was made which had never been claimed, based on a theory that people repress and have no memory of traumatic events that have happened to them. This theory lacks scientific validation, and is certainly not accepted fact.^{27–30}

In case 7 the child refused anal examination and the doctor left the room while the mother had a look. She called the doctor back. The child was lying on her face and clenching her buttocks tightly. The mother separated her buttocks and the doctor recorded '*just had a quick look at a red crack on the anal sphincter between 7 and 8 o'clock with fresh blood*'. The child was so distressed that further examination was impossible. Healing of superficial anal injury is very rapid and can be completed in as little as 24–72 h.²⁵ This child was examined three days after the alleged abuse. A fissure will arise if an object passing in or out stretches the tissues beyond their elastic limit. Once a fissure is formed it is not possible to distinguish the mechanism of injury. Possible explanations which the paediatrician did not consider include a fissure arising through natural causes or from forced separation of the buttocks at the time of examination in a very unwilling child. Cases of anal fissure caused by the examination have been reported.³¹ This possibility is perhaps supported by the fact the alleged anal assault was through her knickers but there was no history of any bleeding or staining of her knickers, or any bleeding noted after defecation.

3.8. Labial findings

In case 8 two doctors opined that the lower part of the labia were fused in a post pubertal 14-year old and that this was entirely consistent with the history of repeated acts of penetrative abuse between 10 and 12 years of age. Two years later an examination under anaesthesia (EUA) for inability to use tampons defined completely normal labia and a hymen with a midline septum, giving two very small openings into the vagina. The most common labial adhesions arise spontaneously in prepubertal children and resolve by puberty. Trauma can cause labial fusion. This is widely seen as a consequence of female circumcision and occasionally following childbirth.^{32,33} Where bilateral lacerations to the labia have occurred and the raw surfaces on either side lie closely approximated then fusion of the skin edges may occur. Traumatic adhesions do not resolve spontaneously but require surgical division. A recent case has been reported where labial adhesions in a post pubertal

girl were assumed to reflect a history of sexual abuse.³⁴ This case also required surgical separation. The literature on trauma and healing associated with sexual abuse does not really support labial adhesions are seen as a consequence. Reflecting on the childbirth and circumcision experience, it does seem that even if sexual abuse were sufficiently traumatic to result in labial adhesions, the adhesions would not resolve without surgical intervention. The doctors in case 8 did not consider the aetiologies and natural history of labial adhesions, or the types of trauma associated with sexual abuse before attributing causation to an unusual finding. The only point about which there seems any certainty is that case 8 was so difficult to examine that only a glimpse was obtained and further attempts were abandoned. Both this fact and the inconsistency with the EUA findings two years later leave considerable doubt about the accuracy of the findings reported at the time of the initial examination.

3.9. Microbiology

In cases 3 and 10 swabs grew anaerobic bacteria. Several of the paediatricians gave opinion that this is a well recognised marker of sexual activity. In reality anaerobes are common in the unoestrogenised vagina, due to the high pH and lack of lactobacilli. In case 10 a paediatrician opined that the occurrence of recurrent dysuria with negative urine cultures made sexual abuse more likely. The child had severe vulvovaginitis yet no thought had been given to the possibility that trauma from scratching might cause stinging on urination. The child had never been tested for threadworm. None of the cases had a diagnosis of trichomonas, gonorrhoea or chlamydia which would more reasonably have given substance to the diagnosis of sexual abuse, at least in the prepubertal children.^{35,36}

3.10. Child's disclosure

In cases 4, 5, and 7 a prepubertal child was considered to have been the source of the allegation. On analysis of this, case 5 was indeed a spontaneous disclosure made by the child to the mother while taking a bath. The child's allegation remained consistent over time and included sexual knowledge beyond that expected for the child's development. However in case 4 a younger sibling said something which the parents concluded had a sexual meaning, and then secondarily concluded that an older boy playing with the children must have molested them. The older sibling was then questioned by the parents, initially denying that anything happened but changed her mind with repeated questioning. The police were involved and instructed the mother to keep a record of what the child said. A growing list of allegations emerged. In the circumstance that a parent or carer has assumed they know what has happened, the questions they ask will tend to be those that confirm their hypothesis, and not questions which might refute the hypothesis. Research has confirmed that children of

this age are highly vulnerable to misleading suggestions.³⁷ This does not mean there is any intention to distort information, but it is why such high importance has been attached to the methods used when interviewing vulnerable witnesses.^{38,39} In case 4 this was further compounded when the interviewer led the child throughout that part of the video interview concerned with the allegations. When she missed out things the interviewer wanted included she was prompted with what had been discussed outside the interview. The examining doctor quoted and underlined the RCP guidance that *the single most important feature in the diagnosis of abuse is a clear statement by the child*.¹² Unfortunately, when put this way, the statement fails to stress the importance that the child's information must be spontaneous. This means it must have come freely and entirely from the child (as in case 5), in which case high importance should be attached to the child's information.

In case 7 the examining doctor was not made aware of numerous discrepancies in the child's account, or that the child had a history of making allegations.

In case 11 a psychiatrist interpreted a child with a speech impediment as saying that her father did it. At a meeting of experts a third doctor disagreed with the interpretation of the genital findings, until she was told that the child had alleged her father did it. As the child's competence increased so did her insistence that she never made any allegation and that her father had never molested her. Eight years after the initial ruling by the family court the ruling was overturned based on review of the psychiatric and the medical evidence.

3.11. Adolescence

Cases involving adolescent disclosure are fundamentally different to prepubertal cases. Firstly the forensic interpretation is very different, since maturation means the adolescent hymen findings reflect those of the adult. Secondly it introduces the possible element of consensual sexual activity, along with other more complex behavioural agendas. English law precludes legitimate sexual activity below the age of 16. This takes no account of the variation in the rate at which young people mature, both physically and emotionally. There is good evidence that prohibition of sex is not accepted by a high proportion of young people, with at least a third disclosing that the onset of sexual activity preceded their sixteenth birthday.⁴⁰ Certainly this

poses a risk for young men who may not be overt sexual predators.⁴¹ Thus in case 6 the paediatrician has used the wrong terminology saying there was child sexual abuse. Sexual attraction to post pubertal females is normal and it is incorrect to include this under sexual deviancy, although inducing sexual activity may not be morally acceptable. This should more appropriately be termed hebophilia not paedophilia. In case 6 there was also inconsistency; the handwritten notes stated the hymen orifice was 1–2 cm but in the subsequent report it was described as at least 2 cm. The opinion that the hymen was “*less fleshy than it should have been*” is a subjective impression only. There are no studies examining the range of fleshiness normally found among the hymens of post pubertal girls. A full thickness defect was described in the posterior part of the hymen. In a prepubertal child this would be evidence of a past penetrating injury (Table 4), however this deduction cannot simply be transferred to the post pubertal situation. There are very few comparative studies examining the effect of sexual penetration on the genital findings in adolescent girls. The first paper on this subject reported the hymen findings in 100 sexually active adolescents, and compared their findings with 100 who were never sexually active but who used tampons, and 100 who were neither sexually active nor used tampons.⁴² Clefts were found in both the sexually active and the never-active groups. Tampon use compared to not having used tampons in their never-sexually-active groups was associated with an increased percentage of complete hymen clefts (14% versus 6%). Twenty (10%) of their 200 never-sexually-active subjects possessed complete hymen clefts, as did 84% (84 of their 100) sexually active subjects. Adams et al. conducted a blinded peer reviewed photographic study to address how sexual activity influences hymen findings in 12–17 year olds.⁴³ Posterior hymen clefts were more common among girls admitting past intercourse but were found in only 48%, as opposed to 3% of girls who denied past intercourse. Thus a complete cleft, as found in case 6, is supportive of a history of sexual penetration but is not definitively diagnostic in an adolescent. Apart from the alleged sexual activity, the finding of a complete posterior hymen cleft could have resulted from abuse earlier in her childhood, from an accidental penetrating injury such as attempted insertion of an object or tampon or from sexual activity at anytime during her adolescence.

Table 4

Published studies on prepubertal girls who have been selected for non-abuse, showing the data on partial notching in the posterior part of the hymen versus complete transection

	McCann et al. (1990) ²²	Gardner et al. (1992) ⁵	Berenson et al. (1992) ⁴	Heger et al. (2002) ⁹
No. of children	86	79	201	147
Partial hymen notch/cleft posteriorly	5.8%	N/A	N/A ^a	18.3%
Complete hymen posterior transection	0	0	0	0

^a The authors initially reported no posterior clefts but subsequently clarified that they were referring to clefts that extended to the base of the hymen. (i.e., there were partial posterior cleft in some non-abused prepubertal girls).

In cases 6, 8, 9 and 13 it was highly inappropriate that no consideration was given to the possibility that an adolescent agenda may lie beneath the allegations, or to the possibility that sexual activity may have occurred within other relationships.

3.12. Terminology

The use of prejudicial terminology was common. Examples include ‘disclosure’ in place of allegations, and complainants called ‘victims’ while the accused were called ‘offenders’. These terms strongly imply something untoward did happen and may subtly influence opinion.

In case 9 the posterior fourchette area was described as ‘frayed’. This is not a term employed in the description or classification of injuries or the normal anatomy of this area.¹⁸ It is meaningless medically but may have influence on a jury. The term friable has been used where the skin of the posterior fourchette appears to break with light pressure. This may be due to irritation, infection, or may be caused by the examiner’s traction on the labia majora, especially when the child has labial adhesions.^{4,22}

There was a strong tendency for common non-specific findings to be described as ‘consistent with abuse’. This terminology is problematic in any civil or criminal process as it is likely to be misunderstood as supportive evidence. The terms ‘defect’, ‘tear’, ‘notch’, ‘cleft’, ‘indentation’, and ‘transection’ were often used interchangeably. All but the last of these do not accurately convey the depth. If the term ‘tear’ is used descriptively it conveys a traumatic aetiology, and should therefore only be applied to causation. The reader is referred to the APSAC glossary of terms for guidance on accepted terminology.¹⁸

4. Discussion

The main conclusion of this paper concerns the training of doctors undertaking child examinations for suspected sexual abuse. A sibling of one of the cases had anogenital findings which the author agreed reflected abnormal trauma highly suggestive of abuse. However among individual cases for which the author has been asked to provide an independent opinion there was no case where the anatomical findings were agreed to be highly indicative of sexual abuse. In the author’s experience these 14 cases are typical of child cases. They emphasise the need to teach physicians how to do a proper examination, how to document the findings (including photography) so that they can be peer reviewed, how to interpret the findings and how to justify any opinion given about the findings. Findings were rarely photographed adequately. Examiners who work in settings without this facility are disadvantaged since they cannot review their work with colleagues to improve examination methods and understanding of acute and healed trauma and other medical conditions that affect the anogenital anatomy. The lack of photographic documentation also seriously hinders independent

expert opinion and on occasion will result in repeat examination of the child.

Many opinions were inconsistent with the evidence-base on this subject, and were not explained or justified. In one of the index cases when a doctor was challenged about the dogmatic manner of their opinion the response was ‘*but I am not responsible for how other professionals interpreted what I said*’. Until now, the criminal court system in the UK has had no control over the way opinion is advanced. In the US the Daubert Ruling requires that expert evidence has a ‘*valid scientific connection to admissibility*’.⁴⁴ The Woolf reforms, effective as of 1997, introduced many of these aspects to civil cases in the UK.⁴⁵ As of November 2006 the first criminal procedure rules on expert evidence have been introduced in the UK.⁴⁶ It is unclear what sanctions there may be against experts failing to comply with these rules.

There is a tension between the medical and the forensic role. In simple terms this is the doctor attempting to fulfil two mutually exclusive roles – advocacy and independence. The medical role demands the doctor act in the patient’s best interests at all times. The forensic duty to gather evidence and give opinion to ensuing proceedings may conflict with various aspects of the medical role. For example the forensic duty of disclosure may conflict with the doctor’s duty of confidentiality. The role of advocacy will conflict with the duty of impartiality to the court, especially the duty to disclose evidence that may not support any opinion the doctor wishes to advance. When forensic experts start to make value judgements serious miscarriages of justice can ensue. The doctors examining the children had usually been briefed by professionals from other agencies who may have already decided that the child had been abused. Their views may have ‘contaminated’ the doctor’s objectivity and impartiality, so fuelling the tendency for common non-specific findings to be described as ‘*consistent with (the suspicion or allegation)*’. Research has shown that the diagnostic expectation, as determined by interpretation of the history given to the doctor, is likely to influence the doctor’s interpretation of the genital examination findings.^{47,48}

It was very common for doctors to opine that “*the child’s statement is the most important evidence*”, without knowledge or consideration of the context in which the child had made the allegation, or whether the allegation did in fact originate with the child. The moral reasoning for this practice may centre on the child’s vulnerability and need for advocacy. Children are not deemed competent witnesses against adults. One means to redress the balance is to accord reliability to the child by adherence to a belief that a child could not make up or lie about such a serious matter. In the past considerable harm has been done from failure to consider the possibility of abuse. The importance of listening to children has rightly been highlighted. However using this moral justification for accepting the word of a child is not adequate and this role confusion must be sorted out. Taking a child seriously means ensuring enquiries are conducted in a manner that

does not assume all allegations about children are automatically believed. Neither of these extreme positions represents the truth, and both of them endanger children.

Adolescents are a special category of child, with a completely different set of behaviours to younger children. Among the adolescent cases account was not taken of this difference, or of the particular difficulties posed by historical claims, where all evidence has long since disappeared.

Child abuse in any form is always unacceptable. However it is not popular to suggest that there is a gap between ethical discourse and practice in child protection. This has merited accusations of ‘displaying a worrisome and persistent bias against the diagnosis of child abuse in general’.⁴⁹ This response is inappropriate. A wrong diagnosis is not benign for the child. Within the criminal justice system testimony that physical findings of sexual abuse exist in an alleged victim is very powerful. ‘To the fact finder, physical evidence is “real” evidence. While there may be reluctance to find abuse based on statements alone, there is none when there is corroborative physical evidence’.⁵⁰ Thus if a doctor is of the opinion that a child has been molested, based on physical findings which in truth do not prove molestation, the court may well rubber-stamp such opinion. This judicial finding then becomes the confirmation which makes the doctor feel he can rely on his experience. Such “confirmation” is, of course, scientifically meaningless.

Conflict of interest

None.

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